WHAT IS CLAIMED IS:

1. A downstream power calibration method on cable modems adapted to set up an individual default data table in each cable modem for calculating the power levels of downstream signals received by the cable modem, the cable modem comprising a tuner, a intermediate frequency amplifier and a modem chip generating feedback signals responding to said tuner and said intermediate frequency amplifier respectively while receiving an inputted signal, the calibration method comprising a preliminary operation step to be executed once and an individual operation step to be executed once for each cable modem;

wherein said preliminary operation step comprises the following procedures:

(A) selecting a quantity of frequency values to serve as base sampling frequencies and then selecting a quantity of power level values to serve as base sampling power levels, thereby generating base sampling signals; wherein the quantity of the base sampling signals is equal to the product of the base sampling frequencies multiplied by the base sampling power levels;

(B) providing a plurality of cable modems and consecutively inputting the base sampling signals into each modem; for each modem, obtaining each sum of the feedback signals responding to the tuner and the IF amplifier by the modem chip corresponding each said base

sampling signal, thereby setting up a sampling data table containing each sum value of the feedback signals corresponding each base sampling signal for each cable modem;

(C) calculating each mean of the sum values of all the sampling data tables under each same base sampling signal, thereby setting up a mean data table containing each mean value of the sum values of all the sampling data tables corresponding each same base sampling signal;

wherein said individual operation step comprises the following procedures:

(D) selecting a quantity of spot frequencies and spot power levels from the base sampling frequencies and the base sampling power levels to generate spot sampling signals, wherein the quantity of which is less than that of the base sampling signals;

(E) inputting consecutively the spot sampling signals into a cable modem and obtaining each sum of the feedback signals responding to the tuner and the IF amplifier of this modem by its modem chip corresponding each said spot sampling signal, thereby setting up a skeleton data table containing each sum value of the feedback signals corresponding each spot sampling signal;

(F) expanding said sum values in the skeleton data table from corresponding said spot power levels into corresponding said base

sampling power levels for any given spot frequency by the following procedures:

(a) calculating the sum values corresponding said base sampling power levels excluding those equal to the spot power levels from the sum values corresponding said spot power levels in skeleton data table by interpolation or extrapolation, wherein these calculated sum values are termed arithmetic sum values;

(b) obtaining the mean values corresponding said base sampling power levels excluding those equal to the spot power levels in the mean data table, wherein these mean values are termed weighting sum values;

(c) calculate computational sum values corresponding said base sampling power levels excluding those equal to the spot power levels in the skeleton data table by the formula as follows:

computational sum value =(weighting sum value × 2 + arithmetic sum value) ÷ 3

whereby each sum value corresponding each base sampling power level under each spot frequency for the modem is obtained in the skeleton data table;

(G) interpolating or extrapolating information in the skeleton data

table such that the sum values corresponding said spot frequencies and said base sampling power levels are expand into sum values corresponding said base sampling frequencies and said base sampling power levels, thereby expanding the skeleton data table into the individual default data table for the modem and providing for the calculation of power levels when the cable modem is receiving downstream signals.

2. The calibration method as defined in claim 1, wherein the base sampling frequencies in procedure (A) are 93MHz, 105MHz, 129MHz, 153MHz, 159MHz, 163MHz, 163.6875MHz, 165MHz, 189MHz, 213MHz, 273MHz, 315MHz, 333MHz, 393MHz, 441MHz, 453MHz, 470.9375MHz, 471MHz, 507MHz, 513MHz, 573MHz, 633MHz, 669MHz, 693MHz, 753MHz, 813MHz and 855MHz.

3. The calibration method as defined in claim 2, wherein the spot frequencies in procedure (D) are 93MHz, 105MHz, 129MHz, 153MHz, 165MHz, 189MHz, 315MHz, 393MHz, 441MHz, 453MHz, 471MHz, 573MHz, 693MHz, 813MHz and 855MHz which are chosen from the base sampling frequencies.

4. The calibration method as defined in claim 1, wherein the base sampling power levels in procedure (A) are –18dBmV, –16dBmV, –14dBmV, –12dBmV, –10dBmV, –8dBmV, –6dBmV, –4dBmV, –2dBmV, 0dBmV, +2dBmV, +4dBmV, +6dBmV, +8dBmV, +10dBmV, +12dBmV, +14dBmV and +16dBmV.

5. The calibration method as defined in claim 4, wherein the spot power levels in procedure (D) are –16dBmV, –12dBmV, –6dBmV, 0dBmV, +6dBmV, and +12dBmV.

6. The calibration method as defined in claim 1, when a sum vale corresponding a certain frequency is calculate in procedure (G) and the reference frequencies at its two sides are in different frequency bands, then the one of the reference frequencies which is close to said certain frequency and in the same frequency band is directly selected for extrapolation.